

Structure of heme

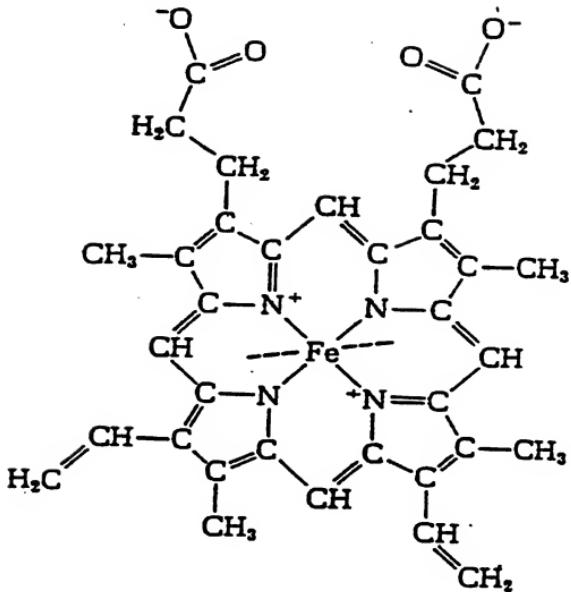


FIGURE 1

Alpha Globin sequence:

1	GTG	CTG	TCT	CCT	GCC	GAC	AAG	ACC	AAC	GTC	AAG	GCC	GCC	TGG	GCC	45
	Val	Leu	Ser	Pro	Ala	Asp	Lys	Thr	Asn	Val	Lys	Ala	Ala	Thr	Gly	
46	AAG	GTT	GGC	GCG	CAC	GCT	GCC	GAG	TAT	GCT	GCC	GAG	GCC	CTG	GAG	90
	Lys	Val	Gly	Ala	His	Ala	Gly	Glu	Tyr	Gly	Ala	Glu	Ala	Leu	Glu	
91	AGG	ATG	TTC	CTG	TCC	TTC	CCC	ACC	ACC	AAG	ACC	TAC	TTC	CGG	CAC	135
	Arg	Met	Phe	Leu	Ser	Phe	Pro	Thr	Thr	Lys	Thr	Tyr	Phe	Pro	His	
136	TTC	GAC	CTG	AGC	CAC	GCC	TCT	GCC	CAG	GTT	AAG	GCC	CAC	GCC	AAG	180
	Phe	Asp	Leu	Ser	His	Gly	Ser	Ala	Gln	Val	Lys	Gly	His	Gly	Lys	
181	AAG	GTG	GCC	GAC	GCG	CTG	ACC	AAC	GCC	GTC	GCC	CAC	GTG	GAC	GAC	225
	Lys	Val	Ala	Asp	Ala	Leu	Thr	Asn	Ala	Val	Ala	His	Val	Asp	Asp	
226	ATG	CCC	AAC	GCG	CTG	TCC	GCC	CTG	AGC	GAC	CTG	CAC	GCG	CAC	AAG	270
	Met	Pro	Asn	Ala	Leu	Ser	Ala	Leu	Ser	Asp	Leu	His	Ala	His	Lys	
271	CTT	CGG	GTG	GAC	CGG	GTC	AAC	TTC	AAG	CTG	CTA	AGC	CAC	TGC	CTG	315
	Leu	Arg	Val	Asp	Pro	Val	Asn	Phe	Lys	Leu	Leu	Ser	His	Cys	Leu	
316	CTG	GTG	ACC	CTG	GCC	GCG	CAC	CTG	CCC	GCC	GAG	TTC	ACC	CCT	GCG	360
	Leu	Val	Thr	Leu	Ala	Ala	His	Leu	Pro	Ala	Glu	Phe	Thr	Pro	Ala	
361	GTG	CAC	GCC	TCC	CTG	GAC	AAG	TTC	CTG	GCT	TCT	GTG	AGC	ACC	GTG	405
	Val	His	Ala	Ser	Leu	Asp	Lys	Phe	Leu	Ala	Ser	Val	Ser	Thr	Val	
406	GTG	ACC	TCC	AAA	TAC	CGT										
	Leu	Thr	Ser	Lys	Tyr	Arg										

FIGURE 2

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Beta globin sequence:

1	GTG	CAC	CTG	ACT	CCT	GAG	AAG	TCT	GCC	GTT	ACT	GCC	CTG	TGG	45	
	Val	His	Leu	Thr	Pro	Glu	Glu	Lys	Ser	Ala	Val	Thr	Ala	Leu	Ter	
46	GCC	AAG	GTG	AAC	GTG	GAT	GAA	GTT	GCT	GCT	GAC	GCC	CTG	GCC	90	
	Gly	Lys	Val	Asn	Val	Asp	Glu	Val	Gly	Gly	Ala	Ala	Leu	Gly	Arg	
91	CTG	CTG	GTT	GTC	TAC	CCT	TGG	ACC	CAG	AGG	TTC	TTT	GAG	TCC	135	
	Leu	Leu	Val	Val	Tyr	Pro	Trp	Thr	Gln	Arg	Phe	Phe	Glu	Ser	Phe	
136	GCG	GAT	CTG	TCC	ACT	CCT	GAT	GCT	GTT	ATG	GCC	AAC	CCT	AAG	GTG	180
	Gly	Asp	Leu	Ser	Thr	Pro	Asp	Ala	Val	Met	Gly	Asn	Pro	Lys	Val	
181	AAG	GCT	CAT	GCG	AAG	AAA	GTG	CTG	GCT	GCC	TTT	AGT	GAT	GCC	CTG	225
	Lys	Ala	His	Gly	Lys	Lys	Val	Leu	Gly	Ala	Phe	Ser	Asp	Gly	Leu	
226	GCT	CAC	CTG	GAC	AAC	CTC	AAG	GCG	ACC	TTT	GCC	ACA	CTG	AGT	GAG	270
	Ala	His	Leu	Asp	Asn	Leu	Lys	Gly	Thr	Phe	Ala	Thr	Leu	Ser	Gly	
271	CTG	CAC	TGT	GAC	AAG	CTG	CAC	GTG	GAT	CCT	GAG	AAC	TTC	AGG	CTC	315
	Leu	His	Cys	Asp	Lys	Leu	His	Val	Asp	Pro	Glu	Asn	Pho	Arg	Leu	
316	CTG	GCG	AAC	GTG	CTG	GTC	TGT	GTG	CTG	GCC	CAT	CAC	TTT	GCG	AAA	360
	Leu	Gly	Asn	Val	Leu	Val	Cys	Val	Leu	Ala	His	His	Phe	Gly	Lys	
361	GAA	TTC	ACC	CCA	CCA	GTG	CAG	GCT	GCC	TAT	CAG	AAA	GTG	GTG	GCT	405
	Glu	Phe	Thr	Pro	Pro	Val	Gln	Ala	Ala	Tyr	Gln	Lys	Val	Val	Ala	
406	GGT	GTG	GCT	AAT	GCC	CTA	GCC	CAC	CAC	AAG	TAT	CAC				
	Gly	Val	Ala	Asn	Ala	Leu	Ala	His	lys	Tyr	Gln					

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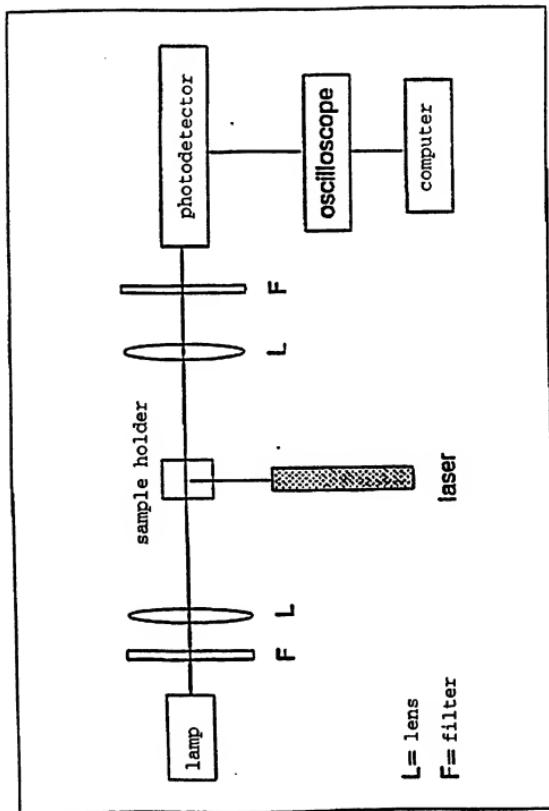


FIGURE 4

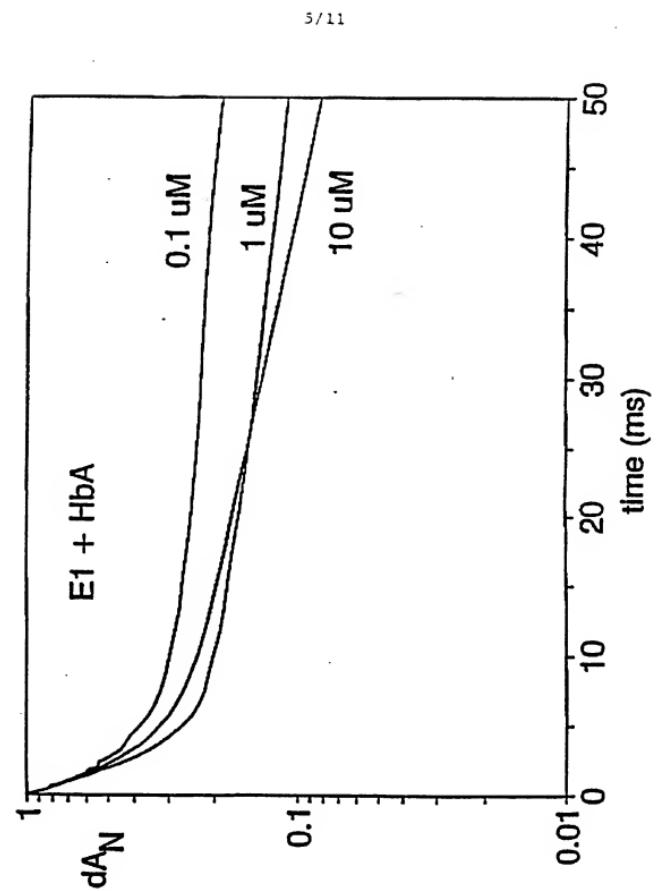


FIGURE 5

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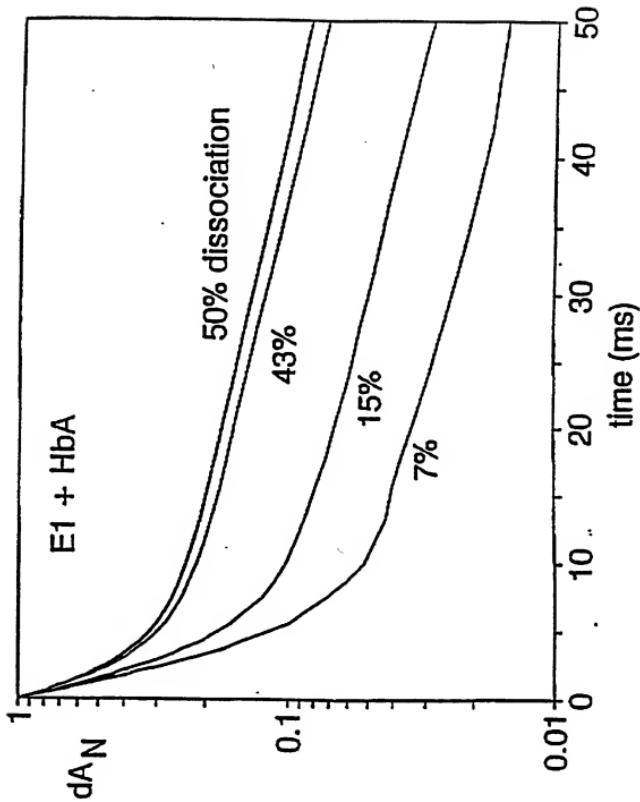


FIGURE 6

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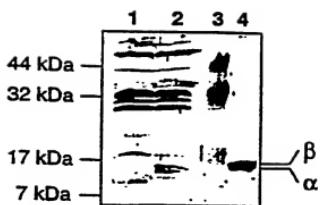


FIGURE 7

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FIGURE 8

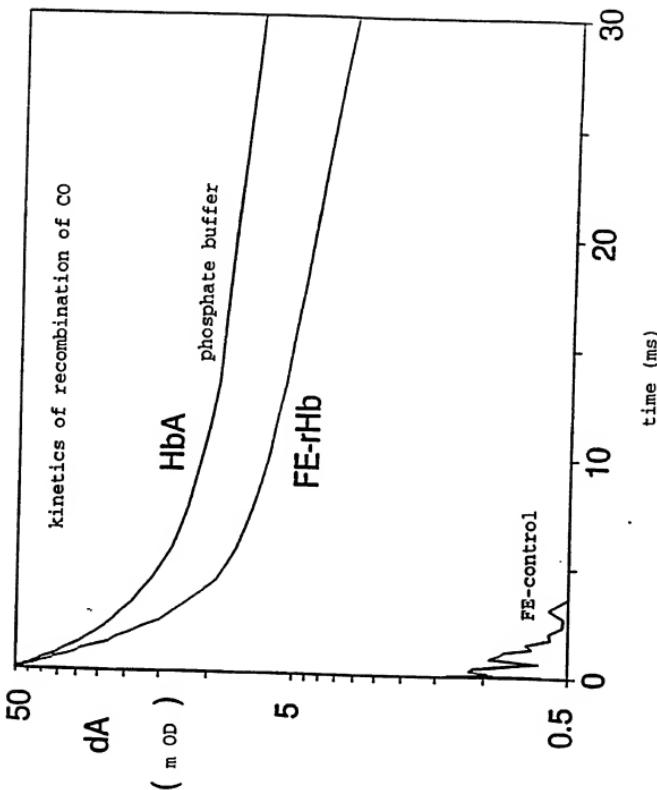


FIGURE 9

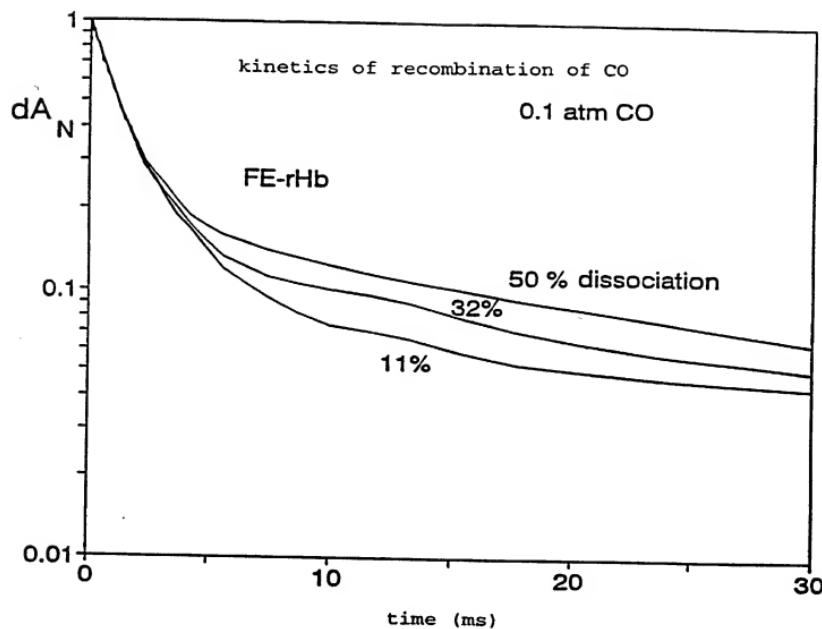


FIGURE 10

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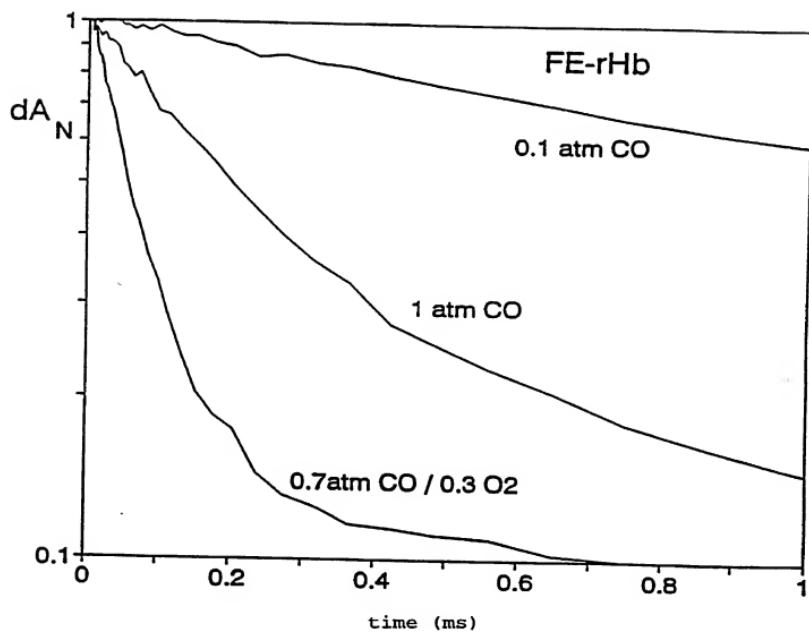


FIGURE 11